UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/675,545	09/28/2000	Philippe Damon	RAL920000036US1	1166

25299   7590   07/02/2003

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EXAMINER
CAO, DIEM K.

ART UNIT	PAPER NUMBER
2126	

DATE MAILED: 07/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

Office Action Summary

-- The MAILING DATE of this communication appears on the cover sheet with th   correspond nce address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _12 May 2003_ .

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-34_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-5,7,10,15,19-21,23,26 and 31_ is/are rejected.

7)☒ Claim(s) _6,8,9,11-14,16-18,22,24,25,27-30 and 32-34_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☒ The proposed drawing correction filed on _12 May 2003_ is: a)☒ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4)☐ Interview Summary (PTO-413) Paper No(s). _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: .

DETAILED ACTION

1.   This Office Action is in response to the Amendment filed on 5/12/2003.

2.   Claims 1-34 are remained.

Drawings

3.   The proposed drawing correction and/or the proposed substitute sheets of drawings, filed

on 5/12/2003 have been approved by the Examiner. A proper drawing correction or corrected

drawings are required in reply to the Office action to avoid abandonment of the application. The

correction to the drawings will not be held in abeyance.

Allowable Subject Matter

4.   Claims 6,8,9,11-14,16-18,22,24,25,27-30 and 32-34 are objected to as being dependent

upon a rejected base claim, but would be allowable if rewritten in independent form including all

of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

6.   Claims 1-5,7,10,15,19-21,23,26 and 31 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Admitted Prior Art (APA) in view of Russell (U.S. 6,349,388 B1) further in

view of Dorn et al. (U.S. 6,012,081).

As to claim 1, APA teaches (page 2) an application program interface (timer

management program) providing a set of synchronous functions allowing an application to

functionally operate a timer (managing a plurality of timers ... data processing system), a timer expires (timer expires).

However, APA does not explicitly teach a timer database for storing timer-related information, and a timer services for detecting the expiring of the timer, a handler function of the timer services allows the application to act on an expired timer without incurring an illegal time-out message.

Russell teaches (col. 4, line 33 – col. 5, line 47) a timer management system (timer processing engine 200), a data structure for storing timer-related information (timer data structures 204), and a timer services for detecting the expiring of the timer (a comparator 208, a timer state machine 206). Although Russell does not teach a database to store timer related information, Russell suggests a data structure could be a table (table or linked list of tables; col. 6, lines 20-38). It would have been obvious to apply the teaching of Russell to the system of APA because it provides a scalable approach to supporting an arbitrarily number of timers and reduces the typical processor overhead and hardware overhead involved in managing timers (col. 2, lines 27-31).

Dorn teaches hooks could be invoked before the timer callback is activated and after the timer callback has returned when the timer expires (timer expires, hooks; col. 13, line 55 – col. 15, line12). It would have been obvious to apply the teaching of Dorn to the system of APA because it provides a method to modify the behavior of an application.

As to claim 2, APA does not explicitly teach creating the timer from an allocated block of system memory, activating the timer, and reinitializing the timer using the allocated block of system memory. Dorn teaches creating the timer from an allocated block of system memory

(timer slot; col. 8, lines 41 - 64), activating the timer (a timer will be instantiated; col. 13, lines 55 – col. 15, line 12). However, Dorn does not explicitly teach reinitializing the timer using the allocated block of system memory. Dorn teaches the slot is reusable. It would have been obvious to apply the teaching of Dorn to the system of APA because it provides the programmers not to bother with the low level details.

As to claim 3, APA teaches (page 2, lines 10-19) when the timer expires (timer expires), the timer management system sends synchronously a time-out message to the application (the application is notified ... timer message).

However, APA does not explicitly teach creating the timer from an allocated block of system memory, activating the timer, wherein the time-out message is sent using the allocated block of system memory. Dorn teaches creating the timer from an allocated block of system memory (timer slot; col. 8, lines 41 - 64), activating the timer (a timer will be instantiated; col. 13, lines 55 – col. 15, line 12). However, Dorn does not explicitly teach the time-out message is sent using the allocated block of system memory. Dorn teaches the time-out message is sent to an internal queue (the expiration event ... internally; col. 14, lines 35-39). It would have been obvious to apply the teaching of Dorn to the system of APA because it provides the programmers not to bother with the low level details.

As to claim 4, APA teaches (page 2, lines 1 – 19) when the timer expires (timer expires) and the timer management program sends a time-out message to a particular queue (the time message ... on queue ... application), wherein the timer is in expired state in an asynchronous state machine (timer expires, asynchronous system). However, APA does not teach creating the timer from an allocated block of system memory, activating the timer. Dorn teaches creating the

timer from an allocated block of system memory (timer slot; col. 8, lines 41 - 64), activating the

timer (a timer will be instantiated; col. 13, lines 55 – col. 15, line 12). It would have been

obvious to apply the teaching of Dorn to the system of APA because it provides the programmers

not to bother with the low level details.

As to claim 5, APA does not explicitly teach the particular queue is a system queue

attached to the application. Dorn teaches the expiration events are queued internally (col. 14,

lines 35-39). It would have been obvious to modify the queue in the system of Dorn to attach to

the application in the system of APA because it serves the same purpose.

As to claim 7, APA teaches the application stops the timer, wherein the timer is in an idle

state in the asynchronous state machine with the time-out message being queued (In an

asynchronous system ... idle state; page 2, lines 10-19).

As to claim 10, APA does not explicitly teach the timer is activated by the application,

wherein the timer is in a running state in the asynchronous state machine with the time-out

message being queued. However, APA teaches the application stop the timer while the time-out

message being queued. It would have been obvious to one of ordinary skill in the art, the

application could continue send the activate request to the timer while the time-out message

being queue.

As to claim 15, see rejection of claim 10 above.

As to claim 19, APA does not explicitly teach the API is a DLL file. It would have been

obvious to one of ordinary skill in the art to implement the API as a DLL because the DLL could

be used in any number of systems.

As to claim 20, see rejections of claims 1 and 4 above.

As to claim 21, see rejection of claim 5 above.

As to claim 23, see rejection of claim 7 above.

As to claim 26, see rejection of claim 10 above.

As to claim 31, see rejection of claim 15 above.

Response to Arguments

7.   In response to applicant's argument that there is no suggestion to combine the references,

the examiner recognizes that obviousness can only be established by combining or modifying the

teachings of the prior art to produce the claimed invention where there is some teaching,

suggestion, or motivation to do so found either in the references themselves or in the knowledge

generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5

USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case,

Claims 1-5, 7, 10, 15, 19-21, 23, 26 and 30

As to Applicant's arguments (pages 17-20) regarding there is no proper motivation for

combining references APA, Russell and Dorn or modifying the references. Applicant also

pointed out the motivation or suggestion to combine references must come from one of three

possible sources: the nature of the problem to be solved, the teaching of prior art and the

knowledge of persons of ordinary skill in the art (page 16). Examiner did provide the motivation

to combine the teaching of APA and Russell (see rejection of claim 1 above). Applicant argued

the provided motivation is not a motivation for combining references APA, Russell and Dorn

without explanations why the motivation is not proper. However, the provided motivation is to

combine the teaching of APA and Russell only. As to the motivation for combining the reference

of APA and Dorn, APA teaches a timer management system to be used in a data processing

system (page 2, lines 1-19) and Dorn teaches a service and event manager which provides a

programmer interface to concurrency, dispatching and synchronization in an object-oriented

computing system, wherein synchronous and asynchronous timer are handled by the service

(abstract, col. 8, lines 51-64, and col. 13, lines 55-64). As Applicant pointed out, the motivation

or suggestion could come from persons of ordinary skill in the art, as applied in this case, and

objective evidence is not needed.

Applicant further argued (page 19) there is no motivation why APA should be modified

to have a timer database for storing timer-related information. APA teaches timers could be in

started, stopped, idled, or expired states (page 2, lines 1-19), and there is a timer management

system for managing the timer. Obviously, timer's related information is needed by the timer

management system, and in the programming art, data could be stored in tables and/or database

as suggested by Russell. One of ordinary skill in the art would clearly know a database is a

perfect choice to store data.

Applicant further argued (page 19) there is no motivation why APA should be modified

to have a timer service detecting the expiring of a timer. Again, APA teaches a timer

management system for managing the timers, and when the timer expires, notifies the application

of such event (pages 2, lines 1-19). Inherently, there is a timer detecting service in the timer

management system of APA. Russell is used to clearly show the timer detecting service in a

timer management system (see rejection of claim 1). Again, motivation could come from ones of

ordinary skill in the art, and is applied in this case.

Applicant further argued (page 19) there is no motivation why APA should be modified

to have a handle function of the timer services allows the application to act on an expired timer

without incurring an illegal timer message. APA teaches an illegal time-out message could occur

in an asynchronous system when the application performs an operation on the expired timer prior

to receiving the timer message (page 2, lines 10-19). Dorn teaches a hook could be used to alter

the behavior of an application. One of ordinary skill in the art could use the same

technique/method and apply to the system of APA to prevent the illegal time-out message

problem because illegal message could cause the application to stop working or crash. Again,

motivation could come from ones of ordinary skill in the art as pointed out by the Applicant.

As to Applicant's arguments (page 19) regarding there is no motivation why APA should

be modified to "provide a scalable approach ... hardware overhead". This argument is not

persuasive since the teaching of Russell is used to show a timer database and a timer detecting

service are utilized in a timer management system.

Claim 1

As to Applicant's arguments (page 20) regarding APA, Russell and Dorn, taken singly or

in combination, do not teach or suggest "an application program interface providing a set ...

operate a timer", and "the timer management program is not an application program interface".

Examiner does not agree because APA teaches a plurality of timers that are stared, stopped,

idled, etc. by an application program, inherently, there is an API that provides functions for

applications to start, stop, or idle the timer. Thus, APA clearly teaches the limitation.

Applicant further argued (page 21) Dorn does not teach a timer service detecting the

expiring of a timer. This limitation is taught by Russell (see rejection of claim 1 above), not by

Dorn as argued by the Applicant. Thus, the argument is not persuasive.

Applicant further argued (page 21) APA, Russell and Dorn, taken singly or in

combination, do not teach or suggest "a handle function of the timer service". See discussion

regarding this limitation above.

Claim 20

As to Applicant's argument (page 22) regarding APA, Russell and Dorn, taken singly or

in combination, do not teach or suggest "creating a timer from an allocated block of system

memory by an application". APA teaches an application can start, stop, idle or restart a timer

(page 2, lines 1-9). Dorn teaches a timer will be <u>instantiated</u> by supplying a time after which it

should be expired (col. 14, lines 17-28), and also refer to Fig. 9 which indicates timer activation.

Combining APA and Dorn, the references clearly teach creating a timer by an application.

Furthermore, one of ordinary skill in the art would know for each object created by an

application, there is a block of system memory is allocated for it. Therefore, the limitation is

taught by APA and Dorn.

Applicant further argued (pages 22-23) regarding APA, Russell and Dorn, taken singly or

in combination, do not teach or suggest "sending a timer-out message to a particular queue when

said timer expired ... an illegal time-out message". APA teaches "in an asynchronous system,

when the timer expires, the timer message may be stored on queue before being sent to the

application", therefore, APA teaches "sending a time-out message ... asynchronous state

machine". Also refer to above discussion regarding the teaching of Dorn for preventing illegal

time-out message.

Claim 2

As to Applicant's argument (page 24) regarding APA, Russell and Dorn, taken singly or

in combination, do not teach or suggest "reinitiating said timer using said allocated block of

system memory". As discuss above, APA teaches an application can restart a timer (page 1) and

Dorn teaches slots are reusable. One of ordinary skill in the art could implement the idea of slot

reusable in the concept of restart a timer by reusing the same memory. Again, combination or

suggestion could be come from ones of ordinary skill in the art, as applied in this case, and

objective evidence is not needed.

Claim 3

As to Applicant's argument (page 25) regarding Dorn does not teach a time-out message.

Dorn teaches "when an interval timer expires before the invocation of the callback function, the

expiration events will be queued internally". Thus, Dorn clearly teaches a time-out message

(expiration event).

Applicant also argued that Dorn does not teach " a time-out message sent to an

application synchronously by timer service". However, this limitation is taught by APA (see

rejection of claim 3 above), not Dorn. Therefore, the argument is not persuasive.

Applicant further argued that Dorn does not teach "a time-out message is sent using an

allocated block of system memory". Dorn teaches timer slots are used within SESAM service to

support timer controlled activities. Thus, sending a time-out message using an allocated block of

system memory is a different implementation to one of ordinary skill in the art. Again, objective

evidence is not needed when the combination or suggestion comes from one of ordinary skill in the art.

Claim 4

As to Applicant's argument (page 26) regarding APA does not teach "wherein said timer services sends a time-out message to a particular queue, wherein said timer is in an expired state in an asynchronous state machine". However, APA teaches "In an asynchronous system, when the timer expires, the timer message may be stored on queue ... the timer moves back to the idle state". Thus, APA teaches a time-out message (timer message) is sent to a queue (stored on queue), the timer is in expired state (timer is expired) in an asynchronous state machine (asynchronous system, timer change from state to state). Thus, APA teaches the claimed limitation.

Claims 7 and 23

As to Applicant's arguments (page 27) regarding APA, Russell and Dorn, taking singly or in combination, do not teach or suggest "wherein said application stops said timer, wherein said timer is in an idle state in said asynchronous state machine with said time-out message being queued". However, the limitation is taught by APA (see rejection of claim 7 above), not taught by Dorn as argued by the Applicant. Therefore, the arguments are not persuasive.

Claims 10, 15, 26 and 31

As to Applicant's arguments regarding APA, Russell and Dorn, taking singly or in combination, do not teach or suggest "wherein said timer is activated by said application, wherein said timer is in running state in ... being queued". APA teaches said timer is activated by said application (a plurality of timers that are started, stopped, idled, etc. by an application

program; page 2, lines 1-9), and application can performs an operation on expired timer prior to receiving the timer message. It would have been obvious the application could restart a timer as suggested by APA (page 1) when the time-out message is still being queued (prior to receiving the timer message). One of ordinary skill in the art obviously would know the system of APA could teach the claimed limitation when provided such clear teaching and suggestion. Again, objective evidence is not needed in this case.

Claim 19

As to Applicant's arguments (pages 28-29) regarding APA, Russell and Dorn, taking singly or in combination, do not teach or suggest "wherein said API is a DLL file". Again, Dynamic Link Libraries are well known in the art because it could be linked and used by applications at runtime. Because of its advantages, it has been used widely in the computer programming art in many fields. Obviously, it could be used in the system of APA by one of ordinary skill in the art. Again, objective evidence is not needed when the motivation or suggestion comes from ones of ordinary skill in the art as pointed out by the Applicant.

Conclusion

8.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Diem K. Cao whose telephone number is (703) 305-5220. The examiner can normally be reached on Monday - Friday, 9:00AM - 5:00PM.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Any response to this action should be mailed to:
Commissioner of Patents and Trademarks
PO Box 1450
Alexandria, VA 22313-1450

Or fax to:
- AFTER-FINAL faxes must be signed and sent to (703) 746-7238.
- OFFICIAL faxes must be signed and sent to (703) 746-7239.
- NON-OFFICIAL/DRAFT faxes should not be signed, please send to (703) 746-7140.

Diem Cao
June 27, 2003

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